

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

TETSUI, et al.

Serial No.: 10/667,651                  Group Art Unit: 1793

Filed: September 23, 2003                  Examiner: MORILLO, J.C.

RCE Filed: October 26, 2006

RCE Filed: October 17, 2007

For: TiAl Based Alloy, Production Process Therefor, and  
Rotor Blade Using Same

DECLARATION UNDER 37 CFR §1.132

I, Kentaro SHINDO, hereby declare and state that:

I am a citizen of Japan, residing at 2-24-24-503, Izumi-machi, Nagasaki, Japan.

2. I work in the section of Mitsubishi Heavy Industries, Ltd., in which research and development related to the present invention were performed. I am fully familiar with the subject matter of the present application as well as the references relied upon by the Examiner in the prosecution of this application.

3. I obtained a Master's degree from Tokyo Institute of Technology, Interdisciplinary Graduate School of Science and Engineering, Department of Material Science and Engineering, in March 1999, where I studied a manufacturing process of thermoelectric semiconductor.

4. I am currently employed by Mitsubishi Heavy Industries Ltd., and began working for Mitsubishi Heavy Industries Ltd., in April 1999, where I have engaged in research and development relating to a manufacturing process of composite products and titanium-aluminum products.

5. I have conducted the comparative tests described below.

**Object of Test**

The purpose of the tests is to demonstrate that the effects of the present invention do not occur when the method of Masahashi et al. is modified.

**Test**

A test piece having a length of 12 mm was subjected to the homogenization heating as defined in Masahashi et al., and then to high-speed working as defined in the present invention with the following particular conditions.

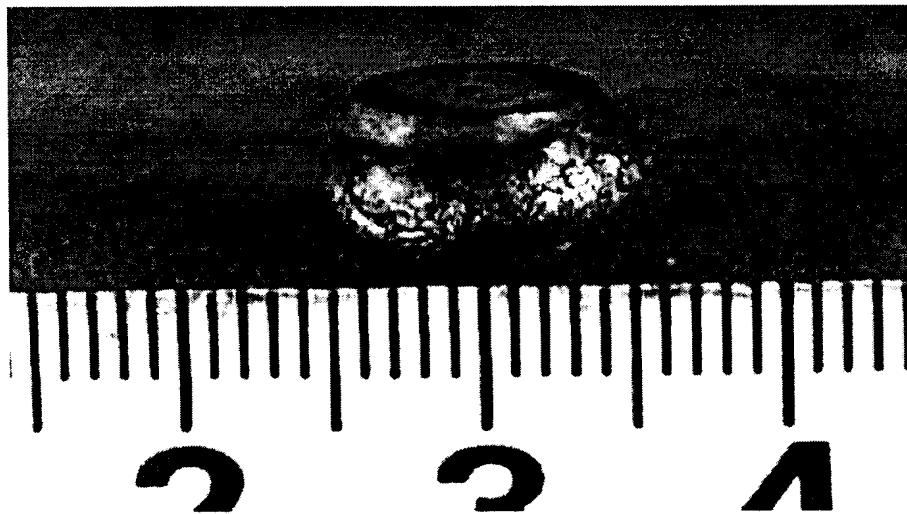
Initial Temperature: 1173K

Initial Distortion Speed:  $8.3 \times 10^{-2}$ /s

Hot-Working Speed: 1 mm/s

**Result**

External Appearance of the test piece

**Conclusion**

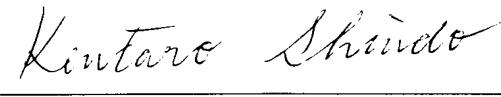
As is evident from the result shown above, when the method of Masahashi et al. is modified to include the step of hot-working as taught by the present invention, a cracking of a test piece occurs even if an alloy having a superior hot-working ability is used.

6. I understand fully the content of this declaration.

7. I, Kentaro SHINDO, the undersigned declarant declares further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these

statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001, of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 4/4/2008



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Kentaro SHINDO